BERA DISPUTE RESOLUTION: STATUS SUMMARY – MARCH 7, 2017

Reference Areas – Still Under Dispute

- Use of Phase 2 reference area data in the calculation of the reference envelope:
  - The NCG continues to dispute USEPA's recommendation to evaluate the suitability of Phase 2 reference area data through the use of the mean PEC-Q metric.
  - However, USEPA has agreed to the inclusion of an analysis of the Study Area bioassay results using a reference envelope comprising the full Phase 2 reference area dataset in the risk characterization section of the BERA, even if the NCG is also required to evaluate the suitability of the Phase 2 reference area dataset using the mean PEC-Q metric.
  - While the NCG still disputes the use of an average mean PEC-Q threshold based on Phase 1 bulk sediment chemistry data from Westchester Creek as an acceptability threshold (i.e., 0.526 rounded up to 0.55) to censor reference area stations, the average mean PEC-Q calculated for Westchester Creek will be calculated using the NCG TPAH (17) method.
  - While the NCG still disputes the use of an average mean PEC-Q threshold based on Phase 1 bulk sediment chemistry from Westchester Creek as an acceptability threshold, the NCG believes the average mean PEC-Q should be re-calculated using adjusted Phase 1 Aroclor data. The NCG was directed by USEPA to adjust the Phase 1 Aroclor data by a factor of 1.75 to represent total PCB congener concentrations.
- Individual reference areas:
  - The revised BERA will include a comparison of the Study Area data to each of the individual reference areas.
  - This evaluation will compare summary statistics for the chemical results and all other endpoints measured for toxicity and benthic community.
  - The individual comparisons will include a discussion of how the four source categories (industrial/non-industrial and CSO/limited CSO) correlate with the results.

Benthic Macroinvertebrates and Confounding Factors – Resolved

- The revised BERA will include several lines of evidence in the risk characterization in an effort to explain the adverse effects to benthic macroinvertebrates observed at nine stations (seven stations in the Study Area and two in Westchester Creek) for which toxicity could not be explained based on porewater chemistry.
- In addition to retaining the lines of evidence and discussion included in the BERA, other lines of evidence will include but not be limited to bulk sediment comparisons, concentrations of individual compounds, DNAPL, and location.
- The risk characterization will include an evaluation of the relative scientific merits of the different lines of evidence.

10-day Sediment Toxicity Test Results – Still Under Dispute

- The NCG agrees that the 10-day study will be included in the revised BERA.
- However, the NCG does not believe the 10-day and 28-day test results should be given equal consideration, for a number of reasons including but not limited to the following:
  - The 28-day test results are ecologically more meaningful with respect to long-term contaminant exposures, and are more consistent with the risk questions in the BERA problem formulation.
  - USEPA guidance acknowledges that chronic tests are more toxicologically relevant, have greater resolution than acute tests, and are more appropriate for organisms that spend most of their time on site (USEPA 1994, 2014).
  - The NCG believes that the 10-day test protocol, which does not include feeding or renewal of the overlying water, may result in increased organism stress above that for which the test is designed to measure due to lack of available food at a number of locations in the Study Area.

Wildlife Exposure Modifying Factors – Still Under Dispute

- The NCG has agreed to use a range of exposure modifying factors (EMFs) in the uncertainty section of the baseline wildlife risk analyses.

- USEPA has stated they would like these ranges to be included in the risk characterization of the report, not confined to just the uncertainty section. The NCG believes the EMFs currently included in the risk characterization section of the BERA are technically justified based on the relevant scientific literature and site-specific data.

Selection of Wildlife TRVs – Resolved

- USEPA has approved the process used by the NCG to select TRVs for the wildlife risk assessment. The information presented to USEPA in updated versions of tables from the BERA report (see technical memorandum to USEPA from NCG dated January 20, 2017 [NCG 2017]) will be included in the revised BERA.
- The NCG has agreed that the risk estimates will be bounded by NOAEL-based HQs and LOAEL-based HQs.

Selection of Tissue Thresholds – Still Under Dispute

- The NCG has sent USEPA two technical documents clarifying the process used in the BERA to select tissue thresholds.
- USEPA is now requesting that the NCG use tissue thresholds from the Passaic site for some chemicals but has approved use of the NCG's approach and selection criteria for other chemicals.
- The NCG has evaluated the Passaic thresholds and finds that they do not meet the NCG's selection criteria presented in the USEPA-approved Phase 2 RI Work Plan Volume 1 (Anchor QEA 2014) and the January 20, 2017 technical memorandum to USEPA (NCG 2017). For example, several of the Passaic thresholds are based on behavioral endpoints rather than survival, growth, or reproduction endpoints, some are based on studies for which the study organisms were exposed to a mixture of chemicals rather than a single chemical, and others were derived by extrapolating from organ concentrations rather than based on whole body tissue concentrations.

White Perch – Resolved

- USEPA has agreed that the BERA does not need to include white perch fillet data in the quantitative risk analyses due to the low numbers of fish caught and the lack of whole body data.
- However, the NCG has agreed to include a qualitative comparison of white perch and striped bass fillet data in the BERA.

Polychaete-Sediment Regressions – Resolved

- USEPA has accepted that the NCG used measured polychaete tissue concentrations to calculate dietary intake for wildlife.
- For sediment locations for which measured tissue data are unavailable, the NCG will include an analysis in the revised BERA to support the use of biota-sediment accumulation factors (BSAFs), on a Study Area-wide basis or for Study Area segments in the baseline wildlife risk analyses.

NYSDEC Water Quality Standards – Unresolved

- NYSDEC has indicated that NYSDEC surface water quality standards (WQS) for the protection of wildlife and human health should be considered in the BERA porewater evaluation.
- The NCG does not agree because the WQS proposed by NYSDEC are not based on the protection of aquatic life and, thus, would not be appropriate for answering risk questions as set forth in the BERA problem formulation. Furthermore, these WQS were not included in USEPA's directed hierarchy at the beginning of the ecological process.

References

Anchor QEA (Anchor QEA, LLC), 2014. *Phase 2 Remedial Investigation Work Plan – Volume 1*. Remedial Investigation/Feasibility Study, Newtown Creek. May 2014.

NCG (Newtown Creek Group), 2017. *Newtown Creek Baseline Ecological Risk Assessment: Selection of Wildlife Toxicity Reference Values and Tissue Effect Thresholds*. Memorandum to U.S. Environmental Protection Agency. January 20, 2017.

USEPA (U.S. Environmental Protection Agency), 1994. *Using Toxicity Tests in Ecological Risk Assessment*. Eco Update. Office of Solid Waste and Emergency Response. Publication 9345.0-051. March 1994.

USEPA, 2014. *Toxicity Testing and Ecological Risk Assessment Guidance for Benthic Invertebrates*. Memorandum to the Environmental Fate and Effects Division (7507P), Office of Pesticide Programs. April 2014.